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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,534	04/25/2006	Stefan Schmitt-Walter	4100.P0421US	8443
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FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			EXAMINER KERNS, KEVIN P	
			ART UNIT 1793	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,534	Applicant(s) SCHMITT-WALTER, STEFAN	
	Examiner Kevin P. Kerns	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2007 and 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "1" ("welding tong drive 1" is not present in the substitute specification of August 13, 2007). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 19 is objected to because of the following informalities: in the 3rd line from the end of the claim, replace "innerwardly" with "inwardly". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-10 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the step" (previously "the step (b)" in the 2nd line). There is insufficient antecedent basis for this limitation in the claim. In this instance, it is suggested to replace "the step" with "the holding step".

Claim 17 recites the limitation "the change". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US 5,988,486).

Kobayashi et al. disclose a method of controlling electrode force of a spot welding gun G that includes open and closed-loop control of welding tongs by using a

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welding tong drive having primary and secondary drive devices (4,6), with the primary drive device 4 (electric servomotor) operable to move two welding tong limbs, or arms 9,10 (see the X-shaped spot welding gun of Figure 8, as disclosed on column 8, line 57 through column 9, line 18) having respective welding electrodes (3,5) moveable toward (and compressing with predetermined force on while acquiring wear/degradation, or bodily changes, to the electrodes 3,5) opposite sides of workpiece(s) W, and with the secondary drive device 6 (electric servomotor) operable to vary spatial orientation (spatial points relative to the workpiece(s)) of the welding tongs (9,10) via a variably applied current while swivelling (pivoting) within a hemisphere in the X-shaped spot welding gun (Figure 8), in which the method includes the steps of providing a welding gun controller 7 and robot controller 8 (Figures 1 and 8) and associated evaluation device (see pressing control flowcharts in Figures 4 and 6) that are operable to move the welding tongs (9,10); providing approach of the welding tongs (9,10) to a predetermined spatial point relative to the workpiece(s) W; holding the welding tongs (9,10) in a fixed spatial position during the approach via an applied holding current (which would be experimentally predetermined and nearly constant); actuating the secondary drive device (servomotor 6) until contact of the workpiece(s) W with the welding tongs (9,10), such that movement of the welding tongs (9,10) would be enabled by providing an adequate contacting (monitored) current to overcome opposing friction forces via an initially high torque, thus acquiring a servo lag in the secondary drive device (servomotor 6); and closing (and subsequently opening after the welding process) the welding tongs (9,10) by the primary drive device (servomotor 4) with an

adequate welding pressure (up to a few kN) to perform spot welding of the workpiece(s) W (abstract; column 1, lines 6-9; column 2, line 4 through column 4, line 47; column 5, line 19 through column 9, line 18; and Figures 1, 2, and 4-8).

7. Claims 1, 2, 13, 14, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Obara et al. (US 5,091,623).

Obara et al. disclose a spot welding gun provided with a backup cylinder that includes open and closed-loop control of X-type welding tongs by using a welding tong drive having primary and secondary drive devices ((26,29) in Figure 2, and (46,49) in Figure 3, respectively), with the primary drive devices (29,49) (main cylinders) being operable to move two welding tong limbs, or arms (23,24) and (43,44) (see the X-shaped spot welding guns of Figures 2 and 3, which are disclosed in detail in column 2, line 54 through column 3, line 66) having respective welding electrodes (28,31) and (48,51) moveable toward (and compressing with predetermined force on while acquiring wear/degradation, or bodily changes, to the electrodes (28,31) and (48,51)) opposite sides of workpiece (32,52), and with the secondary drive device (26,46) (backup cylinders) operable to vary spatial orientation (spatial points relative to the workpiece (32,52)) of the welding tongs (23,24) and (43,44) while swivelling (pivoting) within a hemisphere in the X-shaped spot welding gun (Figures 2 and 3), in which the method includes the steps of providing a robot arm controller (21,41) (Figures 2 and 3) that is operable to move the welding tongs (23,24) and (43,44); providing approach of the welding tongs (23,24) and (43,44) to a predetermined spatial point relative to the

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workpiece (32,52); holding the welding tongs (23,24) and (43,44) in a fixed spatial position during the approach; actuating the secondary drive device (26,46) (backup cylinders) until contact of the workpiece (32,52) with the welding tongs (23,24) and (43,44), such that movement of the welding tongs (23,24) and (43,44) would be enabled by providing an adequate contacting force to overcome opposing friction forces via an initially high torque; and closing (and subsequently opening after the welding process) the welding tongs (23,24) and (43,44) by the primary drive device (29,49) (main cylinders) with an adequate welding pressure (up to a few kN) to perform spot welding of the workpiece (32,52) (abstract; column 1, lines 7-9 and 50-68; column 2, line 18 through column 4, line 18; and Figures 1-3).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 5,988,486).

Kobayashi et al. disclose the features of independent claims 1 and 19.

Kobayashi et al. do not specifically disclose the step of providing another secondary drive device that moves the welding tong about a rotation axis that is transverse to the pivot axis of the welding tong.

However, one of ordinary skill in the art would have recognized that addition of another secondary drive device (provided in addition to the primary and secondary drive devices already existing in the welding tong drive of Kobayashi et al.) would have been an obvious design choice in a welding robot system, in order to obtain further degrees of freedom of rotation in the welding system, thus obtaining further orientations for the spot welding gun during use. Regarding the use of another (second) secondary drive device, it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Response to Arguments

10. The examiner acknowledges the applicant's amendments and substitute specification received by the USPTO on August 13, 2007 and September 10, 2007. The amendments overcome prior objections to the abstract, specification, and claims, as well as all (except one) of the prior 35 USC 112, 2nd paragraph rejections. However, the prior objection to the drawings and 35 USC 112, 2nd paragraph rejection of claim 17 remain (see above sections 1 and 4). In addition, a new objection to claim 19 and a new 35 USC 112, 2nd paragraph rejection to claim 5 is raised in above sections 2 and 4. The applicant has added new claims 19 and 20, and a new 35 USC 103(a) rejection is raised, due to addition of new claim 20 (see above section 9). Claims 1-20 are currently under consideration in the application.

11. Applicant's arguments filed August 13, 2007 have been fully considered but they are not persuasive.

With regard to the applicant's remarks/arguments on pages 9-12 of the amendment of August 13, 2007, the applicant argues in terms of the independent claim 1 limitations "actuation of the secondary drive device up to contacting of the welding object with at least one welding tong limb and acquisition of the contacting" and "after acquisition of the contacting, closure of the welding tong limbs by the primary drive device with build-up of a predetermined compressive force for welding" (see the last two paragraphs on page 9 of the remarks), and the (new) independent claim 19 limitation "maintaining said welding tong limbs in a fixed spatial relationship with respect to each other during the pivoting of the welding tong" (see the last full paragraph on page 11 of the remarks). The examiner respectfully disagrees with these arguments. First, the features of independent claim 1 are taught individually by Kobayashi et al. and Obara et al., as both references disclose X-shaped welding tongs (pivotable about an axis in the center of the "X") that are operable to have each tong separately movable (see Figure 8 of Kobayashi et al., and Figures 2 and 3 of Obara et al.). Furthermore, both disclosures of pivoting X-shaped welding tongs include primary and secondary drive devices (and thus teach "swiveled...essentially within a hemisphere", which is defined by a pivot axis), such that the primary drive device is operable to actuate and apply a predetermined compressive force onto the object(s) to be welded, and the secondary drive device is operable to actuate upon acquisition of the contacting. In other words, the secondary drive device would be for "fine tuning" of the welding operation after the primary drive

device conducts the contacting and closure of the welding tong limbs. Importantly, both Kobayashi et al. and Obara et al. (as taken individually) disclose that one drive device moves both welding tong limbs of the "X" towards the object(s) to be welding. Although the applicant argues that each drive device of the application is actuated separately (instead of only simultaneous operation), this feature is not specifically claimed in independent claims 1 and 19, as the "actuation" and "closure" steps of these claims do not set forth that the secondary drive device is stopped prior to actuation of the primary drive device in the "closure" step. As a result, claims 1-20 remain rejected.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 11/3/07*
Primary Examiner
Art Unit 1793

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November 3, 2007